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**ORIGINAL ARTICLE**

## **Survey on Rate of Pleurisy in Slaughtered Sheep in Tabriz abattoir (East-Azerbaijan province), Iran**

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### **ABSTRACT**

Pleuritis in slaughter sheep has increased in recent years in Tabriz therefore this study out at the Tabriz abattoir during 2010 with inspecting 28850 lungs of slaughtered sheep was done. This slaughtered sheep's by gross examination were examined and 211 cases addicted to pleurisy were observed. The rate of pleurisy in Tabriz slaughtered sheep 0.73% was determined. Also significant different ( $p < 0.05$ ) in pleurisy with sex, season and type of pleurisy were observed. Maximum rate of pleurisy in winter from season aspect, in female from sex aspect and unilateral pleurisy is more than bilateral pleurisy was observed. The study showed that pleurisy in sheep is prevalent in Tabriz. Thus, there is a need to introduce appropriate control measures of diseases affecting lungs to minimize the rate of infection and reduce the ensuing economic losses.

**Key word:** pleurisy, sheep, abattoir, Tabriz, Iran.

### **Introduction**

Pleurisy is an inflammation of the pleura resulting in fibrous adhesions between lung and chest wall. It has been commonly accepted that pleurisy is not a separate entity but part of a pleurisy-pneumonia complex of poorly defined etiology [6,7,17,20]. Acute pleural adhesions are likely to contain large numbers of the bacteria that caused the pneumonia from which they arose. Chronic fibrous pleurisy of any size may only contain a few of these organisms or be sterile depending on the stage of the disease process [8,9]. In the early acute stage of pleurisy, contact and movement between the parietal and visceral pleurae causes pain due to inflammation of the pleura. In the second stage, serofibrinous inflammatory exudate collects in the pleural cavity and can cause collapse of the ventral parts of the lungs [22]. This reduces lung capacity and interferes with gas exchange. In the third stage, fluid is

resorbed and adhesions develop, restricting movement of the lungs and chest wall. Interference with breathing is minor and disappears with time as the adhesions stretch with respiration [3,24]. Pleurisy lesions never resolve completely and permanent fibrous scars remain on the lungs and the parietal pleura. Animals with subclinical pneumonia and those surviving clinical pneumonia may develop pleurisy. Extension of pneumonia from the surface of the lung to the lining of the chest cavity results in the formation of a fibrous adhesion between lungs and the chest wall. These lesions persist after the pneumonia resolves and appear to accumulate with successive episodes of pneumonia [9,11,20].

The aim of present survey is to determine the rate of pleurisy in slaughtered sheep in Tabriz abattoir (center of East-Azerbaijan province) and detection the relation of sex, season and type of pleurisy (bilateral or unilateral) with prevalence rate of this disease.

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**Material and method**

This survey is a cross-sectional study, 28850 sheep were inspected at the Tabriz abattoir weekly within the year (spring 2010 - spring 2011), which for determine the rate of pleurisy in slaughtered sheep in Tabriz abattoir was done. Also in this survey effective agents on pleurisy were distinguished. In present study once time in every week were referred to slaughterhouse and 28850 cadavers for determine the pleurisy were collected. In this research of one designed form consist of sex; season and unilateral or bilateral pleurisy for determine the effective agents and other difference were registered.

*Results:*

The results of these study shows, from 28850 cadavers of sheep in Tabriz abattoir, 211 cases addicted to pleurisy were distinguished and rate of pleurisy 0.73% were determined. Table 1 shows the results of this study ( $p < 0.05$  was considered significant). According to this results can say rate of pleurisy have relation with sex, season and also unilateral pleurisy is more than bilateral pleurisy which this parameters in conclusion has been discussed.

*Conclusion:*

This study demonstrates that lung disease and lesions are a serious problem for sheep health. In world many studies on lung disease and lesions especially for pigs has been done [4,10,12,18,19,21], of course sheeps for rules of them in human nutrition have very importance because the sheep meat have very adherent in world. Pleurisy for economy detriment in meat industry most study on agents of pleurisy has been done in some country [14,15,16,25], but in this study only rate of pleurisy in slaughtered sheep in Tabriz abattoir and relation of pleurisy with some parameter consist of sex, season and type of them (Bilateral or Unilateral) have been demonstrated. Other important agents of pulmonary disease consist of Hydatidosis [23], calcified cyst of *Cysticercus bovis*, *Dictyocoulus viviparous*, *Dictyocoulus filarial* and *Mullerius capillaris* [3], Tuberculosis [1,2,13], Anthracosis and Melanosis [18].

In present study rate of pleurisy in slaughtered sheeps in Tabriz 0.73% were calculated, that this percent is low comparison with one study by Jirawattanapong and et al. in slaughter pigs [12], also pleurisy in pigs by two study with Fraile and Meynsa 26.8 and 20.76 respectively were calculated [10,19].

**Table 1:** Rate of pleurisy of slaughtered sheep in different seasons (Tabriz- Iran).

Sseason	No. cadavers	N. addicted cases	% of addicted cases
Spring	6950	21	0.3
Summer	7450	60	0.81
Autumn	7250	63	0.87
Winter	7200	67	0.93

**Table 2:** Division the slaughtered sheep according to sex.

Cadavers of male	Cadavers of female	Positive of male	Positive of female	% of addicted cases in males	% of addicted cases in females
2400	26450	15	196	0.63	0.74

**Table 3:** Division the slaughtered sheep according to type of pleurisy.

No. cadavers	No. unilateral pleurisy	No. bilateral pleurisy	%of unilateral pleurisy	%of bilateral pleurisy
28850	117	94	0.41	0.31

In one study by Mellau and et al. pleurisy in sheep were not observed and only in cattle were observed that is not confirm with present study or can This difference may be due to differences in geographical locations, etiologies, different definitions used or due to subjective assessments and diagnosis of pleurisy between the two studies [18].

The findings of this study indicate that the prevalence of pleurisy is low in Tabriz, but management factors are central to disease control. This study is bases for other study on determine the agents of pleurisy in Tabriz slaughter sheeps and other ruminants, for example in one study by Fraile and et al. 50.1% of pleurisy in slaughterer-aged pigs by *Actinobacillus pleuropneumonia* were distinguished [5,10].

Also in this study from sex aspect significant different between male and female ( $p < 0.05$ ) were observed and pleurisy in females more than males were distinguished. Of course in this research pleurisy in winter season was observed that can be for cold weather and loss in suitable management [14,15,16,25,26]. In this study acute pleurisy with complete restraint were not observed. So that by attention to results of this study and other studies can say with suitable management consist of suitable nutrition, preventing the sheep not to be exposed to the cold and wind of winter, cold rain, preventing of crowded sheep more than limit in one place, preventing exhausting stress to the sheep like transportation and cold weather stress, recognizing, detecting, separating and treating the effected sheep

to pneumonia, and also keeping in quarantine the animals newly entered to the cattle, can prevent spreading up pleurisy and reducing the rate of this disease.

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